REPORT DOCU

AD-A278 104

Form Approved

OMB No. 0704-0188

Public reporting burden for this collection of information is estimated i-maintaining the data needed, and completing and reviewing the collection suggestions for reducing this burden, to Washington Headquarters

searching existing data sources, gathering and aspect of this collection of information, including Jefferson Davis Highway, Suite 1204, Arlington, VA

| 22202 4302, and to the Office of Management an | d Budget, Paperwork neuuction Project (0704-018 | | |
|---|---|--|--|
| 1. AGENCY USE ONLY (Leave blank) | 2. REPORT DATE | 3 REPORT TYPE AN | |
| | March 1994 | Professiona | l Paper |
| 4. TITLE AND SUBTITLE | | 5. FUNDING NUMBE | RS |
| SYMBOLOGY OPTIMIZATIO | N AND DISPLAY ASSESSMENT | r STUDIES PR: CE31 PE: 060370 | 7N |
| 6. AUTHOR(S) | | | |
| G. Osga and W. Nugent | | | |
| 7. PERFORMING ORGANIZATION NAME(S) AND | ADDRESS(ES) | 8 PERFORMING OR | |
| Naval Command, Control and RDT&E Division San Diego, CA 92152~5001 | Ocean Surveillance Center (NCC | OSC) | ' |
| 9. SPONSORING/MONITORING AGENCY NAME | (S) AND ADDRESS(ES) | 10. SPONSORING/M AGENCY REPOR | ONITORING |
| Chief of Naval Operations Washington, DC 20350 | AGENCY HEPOH | II NUMBEH | |
| 11. SUPPLEMENTARY NOTES | APR 1 4 1994 | | |
| 12a. DISTRIBUTION/AVAILABILITY STATEMENT | | 94· | -11324 |
| | | | |
| Approved for public release; di | stribution is unlimited. | 390 | |
| 13. ABSTRACT (Maximum 200 words) | | | |
| limited coding dimensions do no second study investigated the u- track densities. | ot provide adequate support for in se of two types of de-clutter tools | es. The first study hypothesizes the aformation required in many navy to aid in information extraction from the 31st Meeting, November 199 | mission environments. The om tactical displays with high 93. |
| 14 SUBJECT TERMS | | | 15 NUMBER OF PAGES |
| decision support | | | 10 HOWBETT OF FAGES |
| man-machine interface virtual reality | | | 16 PRICE CODE |
| 17 SECURITY CLASSIFICATION OF REPORT | 18 SECURITY CLASSIFICATION OF THIS PAGE | 19 SECURITY CLASSIFICATION OF ABSTRACT | 20 LIMITATION OF ABSTRACT |
| UNCLASSIFIED | UNCLASSIFIED | UNCLASSIFIED | SAME AS REPORT |
| | | | |

NSN 7540-01-280-5500

Standard form 298 (FRONT)

| 21a. NAME OF RESPONSIBLE INDIVIDUAL | 21b. TELEPHONE (Include Area Code) | 21c. OFFICE SYMBOL |
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| G. Osga | (619) 553-3644 | Code 441 |
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Symbology Optimization and Display Assessment Studies

Dr. Glenn Osga, NCCOSC RDTE DIV 441, 53245 Patterson Rd, San Diego, CA. Mr. William Nugent 92152-7150, 619-553-3644, osga@nosc.navy.mil

The results of two research studies are presented. The first study hypothesizes that current shipboard display limited coding dimensions do not provide adequate support for information required in many navy mission environments. Further, human factors research on the use of compound codes and the theory of sclective attention suggest that compound codes could be used to facilitate complex tactical display information transfer and reduce the effects of screen clutter. A symbol coding scheme, called Variable Coded Symbology (VCS) was developed and tested using NATO STANAG 4420 color-filled symbols and Naval Tactical Data System (NTDS) symbols with various coding dimensions. Usability test results indicated a strong preference for the use of VCS, a taxonomy for information classification, and a substantial perceived benefit for tactical display information extraction tasks. The second study investigated the use of two types of de-clutter tools to aid in information extraction from tactical displays with high track densities. Results indicated the most favorable tool for either NATO or NTDS symbol formats.

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